

**EPA-LWG Meeting on FS  
August 27, 2015**

**LWG List of Issues for Discussion**

**1. Principal Threat Waste**

LWG does not see how this is consistent with guidance or other sites in terms of breadth and amount of PTW identified. It results in a lot of ex- and in-situ treatment, large areas and volumes of materials at low concentrations (200 ppb PCBs). How is this adding to protectiveness or effectiveness of alternatives?

At Duwamish there were much higher concentrations (max concentration of 220 ppm PCBs). And they assumed "there may be PTW out there" but it was not identified in FS or ROD.

EPA- The majority of PTW is not being treated. PCBs at 200 ppb are not being treated.

LWG- it is the PTW identification- where is the line drawn as to what is or is not PTW, then secondly, how to treat it.

EPA- The FS approach is consistent with the guidance. There were 3 different approaches for identifying PTW using a site-specific determination. The risk evaluation shows this is consistent with approach in guidance. Identifying PTW means there is a preference for treatment, not necessarily that it will be treated. Multiple lines of evidence were used. The guidance uses risk as an example. We have NAPL, toxicity, and mobility as lines of evidence.

LWG- preference for treatment- what actually gets treated? In-situ of 5% GAC and ex-situ- thermal desorption- this results in a lot of material treated.

EPA- not all PTW is treated, majority goes to Subtitle D.

LWG- For Alternative D the amount of ex-situ treatment is 40%. The stated implication of preference for treatment is not seen in the document. For Alternative B, PTW drives at least ½ the cost based on treatment and offsite disposal.

EPA- The requirement is to meet ARARs. The requirement for treatment- for a Subtitle C landfill = LDR (Land Disposal Restrictions) requirement. Material to be removed is NAPL, not PCBs.

LWG- It is difficult to go through the decision trees to figure out what is being disposed or treated. It results in GAC in-situ treatment outside of SMAs: a lot more than what was in the draft FS.

Identification of PTW and RCRA result in very expensive remedies. LWG did an analysis of McCormick and Baxter site capping remedy. The cost was \$12 million. They tried to apply the decision to Portland Harbor using the FS decision tree and came up with \$250-350 million. This results in huge cost and scope and implementability issues.

LWG's interpretation of the guidance is if reliably contained then not PTW. There is an improper starting identification of PTW in FS. Section 3 maps the difference between highly toxic, NAPL, not reliably contained is much smaller.

EPA- PTW identification was not tied to volume or cost.

LWG- would not identify reliably containable as PTW.

LWG- in the decision tree there are some steps after identification of PTW where decisions are made that aren't implied by designation of PTW. For the area dredged under PTW, the post dredge cover was assumed to require GAC. Why not sample residuals to see if GAC is needed?

EPA- we are allowing a lot of waste to be left in the river. That is why GAC is required.

LWG- don't see flexibility in the FS.

EPA- This is the process. In the decision tree, if there is a different decision LWG wants to consider, EPA is willing to consider it. EPA tried to keep costs low. EPA is selecting a remedy and components must be specifically identified in order to put forth a conceptual plan. There must be clear, tangible parameters to say what we are planning to do as the remedy. EPA must specify what it entails in the river for construction. The public needs to know so they can comment and their input can be valuable.

LWG- What about pre-remedial design studies prior to ROD? Are we contemplating not doing those studies? Won't these create a new baseline that may significantly change the alternatives spatially? Isn't it realistic to expect that whatever is ultimately constructed would be significantly different than what is promoted as a preferred alternative?

EPA- If there are that many significant changes, there would be a ROD modification.

LWG- Portland Harbor doesn't fit the CERCLA model.

EPA- It is under CERCLA. The statutory requirements under CERCLA require that we must give enough info for the public to provide effective comments.

LWG- There needs to be flexibility. Will have much greater level of detail during remedial design. A different type of capping, goal of protectiveness could be achieved in a different way. Is this flexibility built in here?

EPA- The dredge depths are not prescribed. They are based on RALs, and EPA had to do some interpolations. There will be more specifics in remedial design.

LWG- That is the kind of flexibility we are talking about.

LWG- What would be in the ROD? They have ideas on what prescriptions would be in the ROD. They would be more performance based with ability to use different remedial approaches. The language in the FS sounds like a requirement.

EPA- The FS states many times that these are assumptions. LWG should provide specific examples of where it doesn't say this is an assumption.

LWG- Can we walk through a decision tree? Likely not time-effective to do right now.

EPA- The ROD and Remedial Design are very separate documents. Flexibility can be incorporated into the ROD as long as we understand the ROD is a legal document where a remedy is selected. Flexibility is allowed within the context of the statute and if it is clear how it will be implemented.

LWG will offer some suggestions.

EPA- We can have a separate call regarding PTW.

LWG- We will discuss different lines of evidence to focus on 1 or 2 of them.

## **2. Technology Assignments**

Somewhat covered in above discussion. No additional discussion of this issue.

## **3. Incomplete Evaluation of Alternatives and Effectiveness**

LWG- Alternative G would meet RAOs sooner than other alternatives, but takes 18 years. There is no quantification of long-term MNR. Need to give some credit of MNR occurring over the years. Can't evaluate alternatives without some quantification. For Duwamish, the proposed plan and ROD talk about uncertainty but use long-term projections.

EPA- discounted the long-term projections because of flaws, not uncertainty. We had to go with what we had under the time frame.

LWG- Long-term effectiveness is after RAOs are achieved. Section 4 uses time= 0 SWAC estimates. Why use them for this purpose?

EPA- We considered what you get from construction versus relying on MNR. The T= 0 estimates were used for short-term effectiveness. Residual risk was used for long-term. These were based on rolling river mile at time = 0. This is just looking at what does construction get you as far as risk reduction and meeting RAOs, absent the MNR component. The remedy decision will have to use these factors.

LWG expected a discussion of achievable levels in Section 4. For some alternatives, none of the residual risk get below PRG levels. There is no discussion of background levels, equilibrium.

LWG suggested EPA use empirical data on upstream concentrations.

EPA- We did use this. Sediment trap information was considered and included.

LWG- But didn't use this in developing PRGs in Section 2.

EPA- In the future we may do this if have a reliable model for long-term projections. We did discuss that that MNR is occurring and the basis for why the vast majority of the site uses MNR.

LWG- The evaluation of alternatives may be different if we did have reliable projections.

EPA- If we start from a lower point (concentration), assumed achieve RAOs faster, but this may not be the case. Once you get to certain point there may be a plateau and you won't get recovery as quickly.

#### **4. RCRA Hazardous and Other Waste Designations**

EPA's RCRA expert was on the call to answer specific RCRA questions.

LWG's concern is across Section 3 and 4 there are inconsistencies with regard to the determination of RCRA hazardous waste. Section 4 is inconsistent with the ARAR.

Are the values used in Section 3 the UTS (Universal Treatment Standards)? And was the screening against these values? UTS values are not applicable to remediation waste. Aren't these applied after treatment has taken place?

EPA- Once the waste is picked up and before placing it down you have to meet LDR UTS for sediment and underlying hazardous constituents before it can be placed. CDF is one exception.

LWG- Section 3 says TCLP was used to determine RCRA waste for toxicity characteristics. And it looks like EPA used this to develop alternatives. But in Section 4 it states 20 times the screening level for solid material was used. This assumes all material would leach out in TCLP.

EPA- TCLP is strictly for saying if it's RCRA hazardous waste or not.

LWG- If mapped as LDR, do those areas get removed?

If sediments are removed, would have to be ex situ treated?

EPA- Yes, if picked up material is subject to LDR, then would have to be treated. The ex situ volumes don't change much from Alternative B to G. Get most of it out with Alternative B. The costs aren't increasing that much.

LWG- Section 4 maps- are those the areas that need ex situ treatment because they exceed LDRs?

Section 3 says anything that exceeded TCLP was assumed to be RCRA hazardous waste and therefore requires treatment. Which is it?

EPA- LDRs require you to treat to UTS and underlying constituents. You don't have to treat if you meet LDR (UTS) standard. Table 4.2-11 uses UTS values. Are these used as a surrogate to establish LDR condition? Is UTS the appropriate approach?

There is a quote in FS- dredged sediments are not RCRA waste (regarding placement in a CDF). Page 3-23.

EPA- This is for on-site disposal only. Section 3 uses LDRs to determine hazardous waste "as generated" (by dredging).

LWG- Section 4 figures- do they depict areas determined using LDRs?

EPA- What is removed is subject to LDRs- NAPL, not reliably contained, etc.

LWG- So this is PTW.

EPA- We contacted disposal facilities and they said they would not take the material if it was not treated.

LWG- this is not in the FS.

EPA- not necessary to get that level of detail in FS.

LWG- Ex situ treatment is a big issue in terms of scope of alternatives. The larger scope (cost) affects implementability, etc.

#### **4. Remedial Action Levels**

LWG-There are two main issues:

1. Establishing dioxin/furan, PAHs, DDX RALs, which we've discussed in the past.
2. Role of benthic risk. In Section 3 this isn't addressed as part of alternatives development, but it is an important risk receptor that should be included. What is the rationale to ignore benthic risk when developing alternatives?

EPA- We decided not to place so much importance on benthic risk versus human health and other receptors. We decided to focus on higher concentration areas, to see if dealing with those areas would deal with benthic risk. This is the same with any of the risks- looked to see if dealing with some footprint would deal with this risk. So, it was treated the same as other risks.

LWG- Three different dioxin/furan RALs were developed. There is not a specific relationship between area remediated and risk reduction.

EPA- This is because of the low density of data.

LWG- if you look at the alternatives without the dioxin/furan RALs, the difference in SWAC reductions are similar.

EPA- SWAC reductions in SDUs?

LWG- Looking at site wide SWACs with and without dioxin/furan RALs and the distance to get to PRGs in Section 2, this doesn't get you a lot closer to PRGs.

A lot of work went into developing the dioxin/furan RALs. We totally agree that benthic risk should be addressed through MNR. We are not debating that, but there is inconsistency in tweaking of the other RALs.

EPA- This is one of the contaminants that is covered by the others. Benthic risk is all or nothing, so we chose not to address benthic risk based on a number. It's yes or no. Dioxins/furans are posing fairly high risk and detection limits are above risk-based conc. There is a lack of data.

LWG- The use of TPH is inconsistent with PRGs. Example: RAL curve for TPH is showing cPAH converted to TPH. As we've discussed before, the further you pull apart the FS from the Risk Assessment the less it becomes a risk-based framework.

EPA- RALs have nothing to do with risk. They are levels of concentration at the site. They are not meant to meet risk-based levels.

LWG- But PRGs are on the RAL curves.

6. **Riverbanks**
7. **Risk Inconsistency**
8. **Evaluation of Short-Term Impacts**
9. **Use of Sheet Piles**
10. **Lack of Integrated Designs**
11. **CDF acceptance criteria changes**
12. **Perfunctory Alternative Screening**

Nearing the end of the meeting time, discussion of future meeting to cover remaining issues:

EPA- Issues cannot be resolved with meetings like this. It's not a good use of time for anyone. We need specific sections, questions, so we can prepare. We need to all have document open and be looking at the same thing.

Disposal decision tree is being revised.

A separate call related to PTW can be scheduled. For other issues, LWG will provide comments in writing to determine if there is a good time to have a call to discuss these.